8.3 DNA Replication

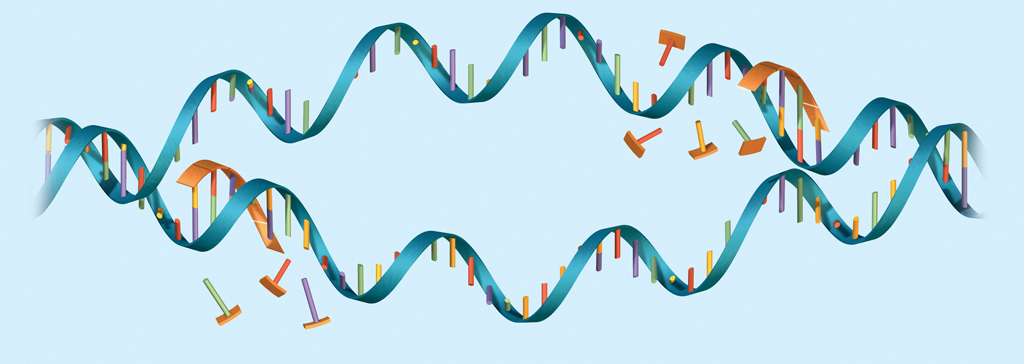
**Key Concept: DNA Replication copies the genetic information of a cell.**

Replication copies the genetic information:

* A single strand of DNA serves as a template for a new strand.
* The rules of base pairing direct replication
* DNA is replicated during the S (synthesis) stage of the cell cycle
* Each body cell gets a complete set of identical DNA.

Proteins carry out the process of replication

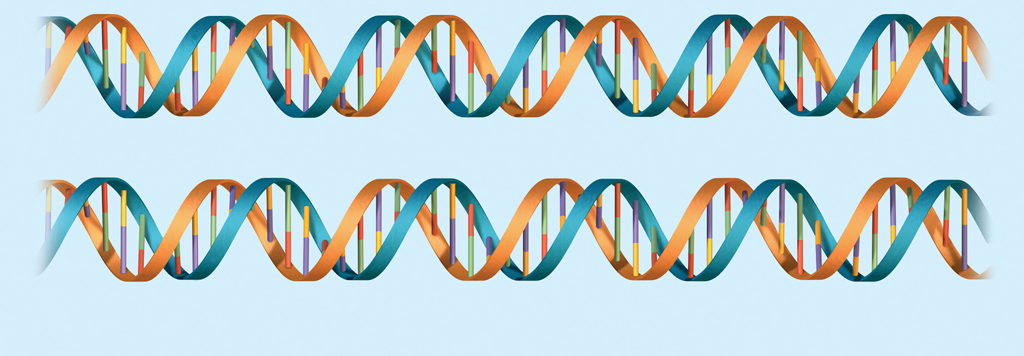
* DNA serves only as a template
* Enzymes and other proteins d the actual work of replication.
  + Enzymes unzip the double helix
  + Free –Floating nucleotides form hydrogen bonds with the template strand.



**nucleotide**

**The DNA molecule unzips in both directions.**

* DNA polymerase enzymes bond the nucleotides together to form the double helix.
* Polymerase enzymes form covalent bonds between nucleotides in the new strand.
* Two new molecules of DNA are formed, each other with an original strand of DNA and a newly formed strand.
* DNA replication is semiconservative.



**original strand**

**new strand**

**Two molecules of DNA**